



UNITED STATES NAVY

MEDICAL NEWS LETTER

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Change of Address

Please forward changes of address for the News Letter to: Commanding Officer, U. S. Naval Medical School, National Naval Medical Center, Bethesda 14, Md., giving full name, rank, corps, and old and new addresses.

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The issuance of this publication approved by the Secretary of the Navy
28 June 1961.

Dosage Schedules in Anticoagulant Therapy

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University of Southern California School of Medicine, Los
Angeles, Calif. Dis Chest XXXIX: 672-675, June 1961.

The anticoagulant agents represent the greatest and most helpful advance in cardiovascular therapeutics in the past 20 years. No longer does the question of usage of the agents arise—the only questions to be answered are: When should anticoagulants be used? and, How should the anticoagulants be used?

When to Use Anticoagulants

Until safer and more effective agents are found to prevent crippling thromboses with their associated cerebral, pulmonary, cardiac, hepatic, renal, splenic, and extremity infarctions, anticoagulants should be used in all patients in whom thromboembolic phenomena have occurred or are likely to occur.

The contraindications to their use include blood dyscrasias, ulcerative lesions of the gastrointestinal tract, a serious and uncontrollable degree of arterial or pulmonary hypertension, serious liver or kidney disease, an unreliable laboratory for control studies and, most of all, an uncooperative and unreliable patient.

How to Use Anticoagulants

- (a) The physician should continue to use the anticoagulant with which he is most familiar.
- (b) There should be available a reliable laboratory with a battery of trained technicians who can do accurate Lee-White and prothrombin times.
- (c) The physician should choose an orally active anticoagulant agent with the knowledge that all known agents available today are equally effective agents when properly administered.
- (d) Time and the urgency of the thromboembolic state should determine the choice of the anticoagulant.

Aqueous sodium heparin should be the emergency anticoagulant. Aqueous sodium heparin is available from many pharmaceutical manufacturers in a wide variety of concentrations; for example, 1000 units (10 mg per cc), 5000 units (50 mg per cc), 10,000 units (100 mg per cc), 20,000 units (200 mg per cc), and 40,000 units (400 mg per cc) are available in rubber sealed vials of one to 10 cc for multiple dose injections or in plastic single dose injectables.

Heparin. Heparin is administered intravenously for immediate anticoagulant effect. The dose is selected according to the patient's size.

In a grave emergency, such as a severe and prolonged attack of angina pectoris, heparin is given without waiting for a Lee-White coagulation time.

Intravenous heparin may be continued every 4 hours in a dosage of one-half the initial dose to keep the Lee-White coagulation time at or near two to three times the patient's normal until such time as the orally administered anticoagulant becomes effective. It is preferable to use the subcutaneous method which will maintain the 11th hour Lee-White coagulation time at or near twice the normal. Lee-White coagulation time is determined each morning at 8 a. m. and the following procedure is adhered to rigidly.

1. Drug—concentrated heparin, either 200 mg or 400 mg, that is, 20,000 or 40,000 units per cc strength of aqueous heparin.
2. Dosage—100 mg concentrated heparin for patients under 140 pounds, 125 mg for patients 140 to 160 pounds, and 150 mg for patients above 160 pounds.
3. Time—every 12 hours, preferably 9 a. m. and 9 p. m.
4. Site of injection—deposit under the skin into the fat overlying the iliac crest or the anterior abdominal wall.
5. The heparin should be measured out in a tuberculin syringe and a one-half inch 26-gauge needle used. The skin should not be rubbed before or after the injection and should not be pinched. The tip of the needle should not be moved. The heparin is deposited under the skin and light pressure made over the puncture site.

In a recently published study it was clearly demonstrated that concentrated heparin used in the above manner was the preferable and feasible drug in a large county understaffed hospital. The maintenance of anticoagulation was well maintained with few dips below the desired level, resulting in a lowered mortality rate, fewer thromboembolic episodes, and less serious bleeding than in a comparable series treated at the same time and by the same personnel using an oral anticoagulant bishydroxycoumarin (Dicumarol).

Subcutaneous concentrated heparin has been used in a large series of physician patients who had suffered one or more occlusions of the coronary, cerebral, or peripheral arteries. Subcutaneous heparin was administered in the aforementioned manner except that a single dose was administered by the physician himself each evening at or near 9 p. m. No control of the Lee-White level was found necessary since no bleeding occurred in this group. In 1860 patient-months of treatment in this manner, only two of the patients had a recurrence of thrombotic episodes and there was no

serious complication from the drug requiring either temporary withdrawal or cessation of the heparin therapy.

Oral Anticoagulants. Oral anticoagulants are administered when thromboembolic phenomena are threatened or have occurred in a patient in whom such contraindications as blood dyscrasias, bleeding gastrointestinal or renal lesions, and serious hepatitis are not found.

The physician should treat his patient with the oral anticoagulant with which he is familiar and use a laboratory in which he has confidence. The primary anticoagulant dosage is usually four times the maintenance dosage; for example, if Dicumarol is used and the initial base line prothrombin time is 100% of control values or greater, 300 mg should be administered; when the prothrombin time is 80 to 100% of control, then 200 mg, between 60 and 80% of control, then 100 to 200 mg, and if below 60%, heparin should be used until such time as a determination of the liver function is accomplished.

The prothrombin time should be prolonged to the desired level of 25 to 30 seconds; i. e., from 15 to 25% of control, and maintained at or near this level until the danger of thromboembolic phenomena has passed and the patient is active physically.

An oral anticoagulant should never be administered without an adequate laboratory, preferably one which performs the test frequently and, preferably, one which uses the Quick or the P and P method.

The physician must be careful to make very little change in the daily anticoagulant dosage once the desired prothrombin level has been reached. An ideal way of dosage management is somewhat as follows: after the desired prothrombin level has been attained, add the total amount of coumarin drug utilized per week and divide this dosage by 7. This should then give the required daily dosage which should prove adequate for an indefinite period unless liver disease, gastroenteritis, or a laboratory error should cause the prothrombin time to change markedly. The following schedule is easily followed by the physician in prescribing the daily dosage of the anticoagulant. Dicumarol is used only because it is the oldest and most widely used anticoagulant drug.

Schedule to achieve an effective anticoagulation level of 25 to 30 seconds or 20 to 25% of control may be as follows:

Prothrombin Time	Dicumarol Dose
100% of control or above	= 300 mg
80 to 100 % of control	= 200 mg
60 to 80% of control	= 150 mg
40 to 60% of control	= 100 mg

A daily maintenance dosage usually proves to be one-seventh of the total anticoagulation dosage.

In arterial occlusive disease of the extracranial and cerebral arteries, coronary arteries, or the peripheral arteries and veins, the anticoagulation drug should be continued as long as there is a threat of recurrence of the thromboembolism.

Heparin or oral anticoagulant dosage should be gradually reduced and not be withdrawn abruptly because of the danger of the prompt occurrence of thromboembolism in vessels in which the disease has not been manifest, but hidden because of the anticoagulant state.

In dental extractions, the prothrombin level may be allowed to rise to 40 to 45% of control levels. If there is post-extraction bleeding, it is readily controlled by an intravenous dose of 10 to 20 mg of conjugated estrogen substance. This dosage may be repeated in 2 or 3 hours, if necessary, without danger of depressing the prothrombin time or increasing the percentage of time control above the 40 to 45% level. In cardiovascular surgery, most operations are successfully performed with the prothrombin level at or near 45% of control values. In prostatic surgery, especially transurethral resection, the prothrombin time should be near the normal of 100% because of the difficulty in hemostasis in the markedly congested prostatic area. Rarely is it necessary to use vitamin K oxide and this agent should not be used unless absolutely necessary because of the rebound phenomenon.

Finally, it is believed that until fibrinolytic therapy is readily available and practical, the physician should continue to use the anticoagulant drug of his choice in every patient whose morbidity and mortality are jeopardized by thromboembolic phenomena.

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Carcinoma in Nontoxic Nodular Goiter

Robert C. Surridge MD, Cons Staff Dept Surg (Daniel Freeman Meml Hosp LA), and William P. Kroger MD, Assoc Prof Surg (SoCal), St. Vincent's Hospital, Los Angeles, Calif. Arch Surg 82:910-915, June 1961.

In a recent survey of private cases at St. Vincent's Hospital, Los Angeles, Calif., 728 nontoxic nodular goiters were noted to have been removed surgically during the past 18 years. Of this group, 57 (7.8%) were malignant. The average age of the patient with carcinoma was 46-1/2 years. The average duration of known thyroid enlargement in patients with carcinoma in this series was 11 years.

The incidence of carcinoma of the thyroid varies widely in various reports, ranging from 1% to as high as 24%. This is largely

due to differences of opinion as to the microscopic diagnosis of cancer of the thyroid, to geographic location of the reported series of cases, and to the types of goiters included in the series.

There are no early signs or symptoms of carcinoma of the thyroid, and the preoperative diagnosis in early cases is extremely difficult. The authors believe that the best hope for obtaining a cure in carcinoma of the thyroid is very early operation, and for this reason they recommend prophylactic thyroidectomy in all adenomas and nontoxic nodular goiters. They also feel that in most carcinomas radical subtotal thyroidectomy plus radiation therapy in some cases is adequate treatment. They do not recommend radical neck dissection unless there is involvement of cervical nodes, and even here its real value is questioned. In the authors' experience, therapy with radioactive iodine has been disappointing.

Cancer of the thyroid is more frequent in women; however, when it does occur in men, it is a much more lethal disease. Nodular goiters and/or enlarged cervical nodes in children should be regarded with suspicion and may be the site of cancer of the thyroid.

In experienced hands, thyroidectomy is a safe procedure with a mortality of less than 0.1%. The average hospital stay is 3 days, and the average patient experiences little discomfort. At present, early thyroidectomy offers the best hope for cure of cancer of the thyroid.

* * * * *

Psychiatric Considerations in Surgery

Alfred Coodley MD FAPA, former Chief Neurology and former Asst Chief Neuropsychiatry, Letterman General Hospital, San Francisco, Calif. J Int Coll Surg 35:745-751, June 1961.

Many problems encountered in surgical patients, including postponement of consultation, untoward attitudes regarding anesthesia, and unexpected and difficult postoperative behavior, have a psychic and emotional basis. The cooperation of psychiatrists is especially valuable in pediatric, geriatric, gynecologic, and plastic surgery, as well as in the treatment of malignant disease. In this article the author appeals to every surgeon for recognition and acceptance of such cooperation whenever possible, not only in the patient's interest but in his own.

In a study of 100 surgically treated children, two groups were set up. In one of them no special consideration was given to emotional factors; in the other, the children had frequent visits from their families, careful preparation prior to admission, and during hospitalization, special provisions for play and early ambulation.

Staff meetings were held to discuss the individual children and their problems. Ninety-two children of the first group showed moderately severe anxiety reactions on discharge; only 68% of the second group had such disturbances. The consensus would seem to favor maintaining a close connection with the child's family (e.g., having the mother live in the hospital room), coupled with an individualized approach to the child's needs, both physical and psychic, on the part of the staff.

It is generally conceded that the reactions of the aged to hospitalization and surgical treatment are more devastating than those of the youngster. A substantial number of elderly patients seem to undergo mental deterioration during their stay in the hospital. This can probably be best explained by a combination of vascular, metabolic, and emotional factors. Those who were living a barren solitary life prior to hospitalization are most liable to mental decompensation, acute or chronic, while in the hospital. The frequency of depressive reactions attests to the expectation of further decline in social and personal status with severe disruption of self-esteem. The experience of frequent deaths among fellow patients, the absence of human contact on a personal level, and intolerance or impatience on the part of the staff contribute substantially to such reactions. The paranoid reactions so commonly observed in the aged may well be a defense against facing the fact that others are indifferent to them; at least, with such bizarre ideas, they cannot be ignored completely.

For all patients, the prospect of anesthesia contributes to the regressive tendency described previously. Realistically, there is always the danger of dying from either the anesthesia or the operation. Beyond these fears, however, remain those life-long fantasies and unconscious associations of anesthesia, sleep, and death. As Meyer has pointed out, narcosis is the prototype of the annihilating passive helplessness accompanying nightmare. Many patients' anxiety is intensified by the possibility that they will disclose repressed painful thoughts or experiences when deprived of the normal controls of their waking hours. The patient may even have some vague concern about possible aggressive impulses on the part of the anesthetist or the surgeon.

In addition, the surgical procedure lends itself to distortion and unconscious fantasies which may result in disintegration and decompensation in a patient with a disturbed personality. In some instances, the operation is followed by a psychosis; in others, a psychotic reaction disappears after surgical intervention. At times, a patient's absolute conviction of the inevitability of a fatal outcome may convince even the hardiest surgeon, despite his completely scientific approach, that he had better desist; all too often such

prophecies have come true. A surgical patient must have ample opportunity to reveal what the operation means to him. He has to verbalize his thoughts concerning the function and significance of the organ to be operated on. He should express his feelings about possible impairment or loss of an organ, particularly as it may affect his earning capacity, his sexual ability, and his day-to-day living. The naivete and pathos of some patients is beautifully illustrated in an embarrassed request an elderly patient facing operation made to a surgeon. Her parting words of "advice" to him as she started for the operating room were, "Please be careful."

Increased study of the psychic and emotional aspects of surgical practice offers new insights into many problems, such as delayed diagnosis and operation, untoward reactions to anesthesia, and unexpected and difficult postoperative behavior.

Attention needs to be directed to psychiatric considerations in such areas as the surgical treatment of children, the special problems of the aged, gynecologic mishaps, the reactions of patients to malignant disease and death, and the unpredictable problems of plastic surgery.

Research has shown certain similarities between the patient who avoids or postpones a needed operation and the "polysurgical" addict. Transient psychotic reactions and regressive behavior are much more common in general surgical patients than formerly supposed.

Crucially involved in all the aforementioned aspects of the problem is the surgeon-patient relation. Continued investigation and research into the emphatic understanding and knowledge which a healthy surgeon-patient relation entails will reveal the extent to which surgical complications, successes, or failures are related to it.

* * * * *

Simplified Treatment of Cancer of the Breast - Early Results of a Clinical Study

George Crile Jr, MD, Department of General Surgery, The Cleveland Clinic Foundation. Ann Surg 153: 745-761, May 1961.

Introduction

There is mounting evidence that conventional radical operations combined with radiation increase the morbidity of patients with breast cancer without increasing their survival rate above that of simpler treatments. Paterson and Russell's double blind study in

Manchester showed that radiation after radical mastectomy had no effect on survival or local recurrence rates of patients whose axillary nodes were involved, and it seemed actually to diminish the survival rate of patients whose nodes were not involved. Smith and Meyer, and Williams, Murley and Curwen have shown that the survival rate of patients treated by simple mastectomy is similar to that following radical operations or may be slightly higher. The blind study of Kaae and Johansen shows no difference in the 3 and 5-year survival rates of patients treated by ultraradical mastectomy with internal mammary and supraclavicular node dissection, and patients treated by simple mastectomy and radiation. Finally, Mustakallio has shown that in 127 patients local excision of small cancers followed by radiation therapy resulted in an 84% rate of survival at 5 years and 72% at 10 years.

The results of the following study suggest that in favorable stages of breast cancer, the early (3 to 6 years) results of treatment are just as good following simple operations with radiation used in only one-fourth of the cases as they are following more radical operations with radiation used in one-half of the cases. In clinical Stage 1 cases, it is even possible that there is a slightly higher survival rate in patients treated by simple operations, usually without radiation, as compared with radical ones with or without radiation. If such a difference actually exists, it is further evidence that in certain types of systemically metastasizing cancer, less attention must be paid to the possible involvement of lymph nodes by tumor and more to the possible immunologic role of the lymphocytes in the nodes as a defense against the cancer cells that are circulating in the blood.

Plan of Study

In January 1955, the author decided to use simple mastectomy, usually without radiation therapy, as the standard treatment of most patients with cancers that had no clinical evidence of cancer beyond the breast. At the same time, colleagues in the Cleveland Clinic, who together did approximately the same number of breast operations as he did, continued in most cases to do the conventional radical operations and often added postoperative radiation. The stages of the disease, size of the tumors, and ages of the patients were similar in the simple mastectomy and radical mastectomy series. Despite this, factors of selection still were present and occasionally made it difficult to compare results. All types except invasive cancer were eliminated from the tables in which results of simple and radical operations are compared. Also eliminated, but included in over-all figures, are senile patients to whom no surgical treatment was given.

Selection of Cases

The series of cases here reported includes all patients with previously untreated cancer of the breast seen in all departments of the Cleveland Clinic in the 5-year period, 1953 - 1957, inclusive. All presently living patients have had the diagnosis histologically confirmed. Among these there were several patients who had intra-ductal cancer without invasion. Because this special type of cancer usually is included in reports of survival, the author has included them in the over-all survival figures.

Plan of Clinical Staging

In the 1955, 1956, and 1957 series, the patients were staged before operation by the surgeon in charge and at least one other. The clinical stage assigned before operation was not changed regardless of the operative findings or the pathologist's report. The 1953 and 1954 cases were staged retrospectively on the basis of the physical examination recorded in the chart and without reference to the pathology report.

Definitions

Clinical Stage 1. Disease apparently limited to the breast—no apparent involvement of axillary nodes. Tumor not fixed to chest walls; no satellite skin nodules. No striking edema.

Clinical Stage 2. Same as clinical Stage 1 except axillary nodes appear to be involved. Nodes not fixed.

Clinical Stage 3. Axillary nodes are fixed, or supraclavicular nodes are involved; tumor is fixed to chest wall or has satellite metastases to skin of chest wall, or there is striking inflammatory type edema.

Clinical Stage 4. Distant metastasis demonstrable.

Summary

In the treatment of clinical Stage 1 cancer of the breast, simple mastectomy without prophylactic radiation appeared to be at least as effective as radical mastectomy with or without radiation.

In those patients with clinical Stage 1 cancer who were treated by simple mastectomy without radiation and whose disease later reappeared in the axillary nodes and then was removed by axillary dissection, the patients' chances of survival did not seem to be any less than if the axillas had been treated prophylactically by radical mastectomies. The number of nodes involved was not increased by delay.

In favorable clinical Stage 2 cancers, modified radical mastectomy, with preservation of the muscles and without radiation therapy seemed to be as effective as any other treatment or combination of treatments. It caused less disability than the conventional radical operation and was less cumbersome than simple mastectomy and radiation.

The success of simple treatments is well enough established that controlled clinical studies can now be done without fear of doing an injustice to the patients receiving the simpler treatments.

Controlled (blind) clinical studies are urgently needed to determine what treatment of patients in each stage of breast cancer will produce the highest survival rate with the lowest morbidity.

* * * * *

Age and Automotive Accidents

Donald P. Kent, Director, and Geraldine B. Novotny, Departmental Assistant, Institute of Gerontology, University of Connecticut, Storrs, Conn. Geriatrics 16:271-277, June 1961.

Almost without exception during the past two decades there has been a yearly increase in the number of automotive accidents. This spiraling number has reached appalling size and has prompted a nationwide search for means to reverse the trend. Both mechanical and human factors are being scrutinized.

The elderly driver has been accused of being a road hazard and of being responsible for more than his share of the ever mounting number of automotive accidents. Examination of existing data and studies reveals insufficient evidence to warrant this conclusion. Periodic examinations and other measures designed to decrease accidents are appropriate for all age groups. To single out the aged is discriminatory.

Analysis indicates that the major cause of accidents is not physical defect but poor judgment, emotional stress, and imbibing alcoholic beverages. There is no evidence that poor judgment is the exclusive property of any age group. This leads to the conclusion (as pointed out in the Journal of the AMA 169: 1159, 1959 - Medical Guide for Physician in Determining Fitness to Drive Motor Vehicles), that, "As yet, only limited reliable data are available to aid in identifying drivers most likely to become involved in accidents. The characteristics most clearly related to repeated accidents or high accident rates are very low intelligence, youthfulness, and a personality make-up featured by egocentricity, aggressiveness, antisocial trends, and social irresponsibility."

Conclusions

It seems to the authors that one is compelled by logic to these conclusions: (1) There is insufficient evidence to warrant the conclusion that older people as a group are more accident-prone than younger people; (2) Since the physical and psychologic decrements that come with age begin early in life and vary greatly with individuals, it seems poor policy to set apart any age group as a high hazard group; (3) There are serious questions about the validity and feasibility of tests for older people; and (4) It seems inconsistent with democratic philosophy to single out one group for special examination when the same traits are presented in substantial numbers in other groups.

* * * * *

Ototoxicity of Neomycin

E. B. Halpern MD and M. F. Heller MD. Ototoxicity of Orally Administered Neomycin, Arch Otolaryng 73: 73-75, June 1961.

The ototoxicity of parenterally administered neomycin is now well recognized. There are, however, no reports of ototoxicity from orally administered neomycin. The authors believe the patient described in their report is the first case to be recorded in the literature of sensorineural deafness resulting from the oral administration of neomycin sulfate.

Comment. Large doses of orally administered neomycin are used to reduce the number of ammonia-producing organisms in the intestinal tract and to prevent further embarrassment of the ammonia-detoxifying properties of the liver in hepatic decompensation and coma. Quantitative urine assays have indicated that approximately 3% of ingested neomycin is excreted by the kidney. Therefore, a patient who, as in the authors' case, has received over 600 gm of neomycin orally is able to absorb at least 18 gm. Since ototoxicity can be produced from amounts as small as 7 or 8 gm administered intramuscularly, the ototoxic effect of high doses of oral neomycin is readily understood when the absorption factor is considered.

Several different approaches to decrease the otologic toxicity of *Streptomyces* antibiotics (streptomycin, viomycin, and neomycin) have been made. Keller and associates have shown from studies on mice that tissues derived from ectoderm (e. g., cochlea and vestibule) receive a protective effect from the activity of *Streptomyces* antibiotics when they are administered with pantothenic acid, while those tissues derived from mesoderm and entoderm (e. g., kidney)

do not. More recently, it has been shown that neomycin glucuronate is equal to neomycin sulfate in its antibacterial effect, and that the neurotoxic effect of the former on the cochlear vestibular structure was noticeably less than that of the latter.

The authors also record a sensorineural deafness in a patient who received 6.75 gm of neomycin intramuscularly over a period of 7 days. A hearing loss was noted 7 days after therapy was started, resulting in complete bilateral deafness in one month. After this article was submitted for publication, reference was noted which also describes a case of ototoxicity from orally administered neomycin (P. M. Last and S. Sherlock. Systemic Absorption of Orally Administered Neomycin in Liver Disease. *New Engl J Med* 262: 385-389, February 25, 1960).

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MISCELLANY

Critique on Therapy of Heat Stroke - Pharmacologic vs Physical Agents in Treatment

The following critique was submitted by CAPT David Minard MC USN, Head of Thermal Stress Branch, Occupational Medicine and Dispensary Division, Bureau of Medicine and Surgery, and Head, Thermal Stress Division, Naval Medical Research Institute, NNMC.

Announcing a "new pharmacologic treatment" of heat stroke, R. J. Hoagland and R. H. Bishop Jr, (A Physiologic Treatment of Heat Stroke, *Amer J Med Sci* 241: 415, 1961) recently described the successful treatment of one case of heat stroke which occurred in a U. S. Army recruit admitted to the hospital in July 1960 with a body temperature in excess of 42.2 C (108 F). Stating the principle underlying their treatment to be the reduction of metabolism and oxygen demands of tissues, these authors attributed recovery of their patient to the intravenous administration at various intervals of promethazine, chlorpromazine, and dipyrone, drugs which were said to suppress metabolism and counteract shock. Hydrocortisone, intravenous fluids and oxygen were also given. The authors condemn active cooling in heat stroke as being unphysiologic because

they say this form of treatment increases metabolism. By the same token they state that the rate of reduction of body temperature is not important as long as the procedure succeeds in avoiding any increase in oxygen demands by the tissues. These concepts directly challenge existing principles of treatment which hold that the primary lesion in heat stroke is thermal injury to the brain, the effects of shock and anoxia being secondary. Upon this basis, therefore, immediate and rapid cooling is vitally essential if fatal or lasting neurologic lesions are to be avoided.

Because it rejects accepted principles and practices, the report of Hoagland and Bishop deserves critical evaluation. Aside from the statement of these authors that the primary pathology in heat stroke is from anoxia rather than thermal injury, a view contrary to that expressed by Malamud, Haymaker, and Custer (Mil Surg 99:397, 1946) an examination of the case report upon which the authors base their far reaching conclusions fails to support their assertion that no form of active cooling (or "cryotherapy," to use their term) was employed in the treatment of this case. It is noted that, in addition to being treated with the various agents already listed, the patient was transferred to a ward where his body was intermittently sponged with water and exposed to "two small electric fans" at a distance of five feet. Although air temperature in the ward is not reported, the authors in a final section of their paper recommend "intermittent sponging with water at room temperature; that is, about 70 F."

The procedures described, therefore, conform closely to the treatment of heat stroke by evaporative cooling, the successful employment of which was first described over one hundred years ago. It remains the treatment of choice by many clinical investigators.

Because the physical conditions which the authors describe could, in themselves, account for the rate of cooling observed in this patient, the conclusion that his recovery was solely a response to drug therapy is unjustified. The concept that drugs alone could stop the upward spiral of body temperature in heat stroke and initiate its downward descent in a victim exposed to heat overlooks the fact that failure of body temperature regulation in heat stroke is in mechanisms of heat loss, and is only indirectly related to heat production. If ambient temperatures exceed that of a dry body, its temperature will increase whether it produces heat or not. Metabolic suppressants under such circumstances would be of no avail. The only drugs which in the absence of cooling could be helpful in heat stroke are diaphoretics, but none of the many tested have succeeded in initiating sweating.

Nevertheless, the authors suggest that their "new pharmacologic treatment" is superior to physical agents in treating heat

stroke because it can be used in tropical or desert warfare and under conditions of nuclear warfare when ice and water are not available.

It is apparent from the foregoing discussion that this suggestion is misleading and potentially dangerous because physical agents of cooling are indeed essential in reversing the upward spiral of body temperature in heat stroke, and in fact apparently played an important role in the recovery of the case described by Hoagland and Bishop.

The extent to which chlorpromazine alone, in combination with dipyrone, or with other drugs, may contribute to more rapid recovery in heat stroke and in preventing recurrent rises in body temperature deserves further study, but to consider that these may supplant cooling by physical means is unwarranted.

* * * * *

History of the Medical Department, U.S. Army in World War II - Preventive Medicine Series

The following information has been received from the Historical Unit of the U. S. Army Medical Service, Walter Reed Army Medical Center, Forest Glen Section.

The publication this month of Volume V in the preventive medicine series brings to 16 the number of volumes now available in the History of the Medical Department, U. S. Army, in World War II.

The new volume covers Communicable Diseases Transmitted Through Contact or by Unknown Means. Prepared by 27 doctors who battled these illnesses among the fighting forces of World War II, it reports upon a number of diseases infrequently encountered in this country—actinomycosis, leprosy, leptospirosis, schistosomiasis, and yaws. It also covers in detail the more common diseases which affected our fighting forces—and which also attack our civilian population—hookworm, fungus infections, impetigo, scabies, trachoma, infectious mononucleosis, poliomyelitis, Q fever, viral hepatitis, and venereal diseases.

This is the second volume in the preventive medicine series devoted to communicable diseases; the first, published in 1959, covers diseases transmitted chiefly through the respiratory and alimentary tracts.

Edited by Ebbe Curtis Hoff MD, this book numbers among its contributors many eminent medical men who have gained recognition in their specialties. Among them are Dr. Thomas B. Turner, Dean of the Medical Faculty and Professor of Microbiology at The Johns

Hopkins University; Dr. Thomas G. Ward, Professor of Virology, University of Notre Dame; and Dr. James A. Doull, Medical Director, Leonard Wood Memorial.

Other books in the World War II Medical History, prepared by The Historical Unit of the U. S. Army Medical Service and published under the direction of The Surgeon General, are:

Cold Injury, Ground Type
Dental Service in World War II
Hospitalization and Evacuation
Preventive Medicine in World War II, Vol II, Environmental Hygiene
Preventive Medicine in World War II, Vol III, Personal Health Measures and Immunization
Preventive Medicine in World War II, Vol IV, Communicable Diseases Transmitted Chiefly Through Respiratory and Alimentary Tracts
Surgery in World War II, Vol II, General Surgery
Surgery in World War II, Hand Surgery
Surgery in World War II, Neurosurgery, Vol I
Surgery in World War II, Neurosurgery, Vol II
Surgery in World War II, The Physiologic Effects of Wounds
Surgery in World War II, Vascular Surgery
Surgery in World War II, Orthopedic Surgery, European Theater of Operations
Surgery in World War II, Orthopedic Surgery, Mediterranean Theater of Operations
Surgery in World War II, Ophthalmology and Otolaryngology

All volumes listed are available from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Interested persons should contact their library committees.

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1962 Inservice Residency Training Program
Change in Deadline Date for Submission of Applications

All requests for 1962 inservice residency training must be received in the Bureau of Medicine and Surgery prior to 15 November 1961. The Bureau's Professional Board will meet early in December to make selections for the 1962 residency training program. All applicants will be notified of their selection or non-selection by 15 December 1961.

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Announcement of Courses in
Aerospace Medicine

<u>Course</u>	<u>Class</u>	<u>Inclusive Dates</u>	<u>Deadline Date to Apply</u>
Medical Support of Missile Operations	61-D	7-18 Aug 1961	24 July 1961
	61-E	2-13 Oct 1961	28 July 1961
	62-A	5-16 Mar 1962	11 December 1961
	62-B	7-18 May 1962	11 February 1962
Medical Support —Space Flight	61-B	16 Oct-10 Nov '61	1 August 1961
	62-A	21 May-15 Jun '62	27 February 1962

The above scheduled courses will be conducted by the U.S. Air Force Medical Service at the School of Aerospace Medicine, Brooke Air Force Base, Texas. SECRET security clearance is required on all candidates approved for attendance.

The presentation of Medical Support of Missile Operations is designed to give officers of the Army, Navy, and Air Force an intensive short course in practical application of industrial medicine as it pertains to operation of military systems. The prerequisites include a present or potential assignment in organizations possessing operationally ready military missiles.

The presentation of Medical Support for Space Flight will provide preliminary training in the specific areas of professional knowledge required for medical officers of the Armed Services. Prerequisites include: (1) Must have satisfactorily completed the Primary Course in Aerospace Medicine conducted by USAF or the Basic Course for Flight Surgeons as conducted by the U.S. Navy; (2) Must be actively engaged in teaching or practice of aerospace medicine or conducting aeromedical research.

In view of the anticipated shortage of travel funds for fiscal year 1962, only a limited number of officers can be authorized to attend the courses on travel and per diem orders chargeable against Bureau of Medicine and Surgery funds. Eligible and interested officers who cannot be provided with travel orders to attend at Navy expense may be issued authorization orders by their Commanding Officers following confirmation by this Bureau that space is available in each case.

Requests should be forwarded in accordance with BUMED INSTRUCTION 1520.8 and comply with deadline dates as indicated above. All requests must indicate that a Security clearance of SECRET has been granted to the officer requesting attendance.

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From the Note Book

Letter to the Surgeon General

The following letter was received by the Surgeon General, Rear Admiral Edward C. Kenney MC USN, upon the occasion of the retirement of Captain J. E. Nardini MC USN.

"Dear Admiral Kenney:

Upon the eve of retirement from the Medical Corps of the Regular Navy after twenty-three years of active duty, I wish to express a few deep emotional sentiments. In the ordinary course of events in governmental, bureaucratic operations, a dense cloud of rigid officialdom obscures many of the more meaningful personal feelings and reactions of the vast group of individuals contributing their own small efforts. The full force of emotional reaction associated with twenty-three years in the Navy does not permit separation without some expression of personal inner feelings.

Upon entering the Navy in 1938, I had no intention of serving beyond a year or two which would provide internship training and some travel. A long chain of circumstances, including World War II, happily altered this preliminary idea. I think it is a striking testimony to the best organization in existence, namely the United States Navy, that in this period of time I have never had cause to feel that I received, as a person, anything less than superior consideration and treatment from all levels of the Navy.

Thus, it is inevitable that some feelings of guilt intrude themselves at this time of separation. The quality of leadership, morale, and esprit de corps in the Navy and Marine Corps with which I have long been intimately connected, I think, represent a segment of our national life which, if it could be extended into all other areas of our national life, would without any question guarantee a long standing or everlasting national survival in the face of competing international ideologies. The greatest honor of my life has been the privilege of serving in the United States Navy. While I have given freely of my time, energies, and efforts, the rewards have far outstripped these humble efforts.

My reasons for leaving the Navy are purely personal and center almost entirely on the issue that is my long time desire to continue the active practice of medicine into the seventies, God willing. There is no organization or academic situation which allows this

luxury, hence, it becomes necessary to enter the private practice of medicine. When I entered the Navy, there was no twenty-year retirement. From a purely personal point of view and as an observer in general, I feel that it is a most valuable feature which should be preserved if it is desired to maintain a high level officer corps.

In closing, I wish merely to add that I will for the remainder of my life continue as a loyal, ardent, admiring supporter of the U. S. Navy.

Sincerely yours,

J. E. NARDINI

Captain MC USN"

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LT Lamb MSC USN represents BuMed. LT Jean L. Lamb MSC USN represented the Bureau of Medicine and Surgery and monitored an exhibit at the 30th National Conference of the American Physical Therapy Association held in Chicago, Ill., 2 - 7 July 1961. LT Lamb is a physical therapist on duty at the U. S. Naval Hospital, Philadelphia, Pa.

Influenza, Philippine Islands. Frozen samples of throat washings and serum specimens from acute influenza cases, together with convalescent serum specimens, were forwarded to NAMRU-2 on Taiwan for laboratory analysis. These control measures were stimulated by an outbreak of 126 cases (24 acute) among American personnel in the Manila Area. There were 2905 cases among the Armed Forces of the Philippines, and 8855 cases in the civilian population with 11 deaths.

Solitary Pulmonary Nodule. The authors conclude that every solitary noncalcified pulmonary nodule demands thoracotomy. For patients with bronchial carcinoma, absence of symptoms and promptness of surgery are likely to determine the chance for cure. Careful histologic study of the pulmonary granulomas will reveal the majority of nodules to be of fungal rather than tuberculous origin. (Sol Katz MD, et al, Disease-a-Month, April 1961)

New Antiarrhythmic Drug. The effects of RO 2-5803 (Rhythmol—Hoffman La Roche), a compound shown to have antiarrhythmic properties in animals, were studied in 13 patients with atrial flutter or fibrillation. After a single oral dose, the atrial rate was slowed as

much as 39%; the effect lasted up to 24 hours. Intravenous administration produced similar effects with smaller doses. There were no untoward effects. (H. Kahn, et al, Clinical Pharmacology and Therapeutics, March - April 1961)

Tetracycline Combined with Antifungal Agent. In double-blind studies, fungicides have seldom lessened the frequency or severity of gastrointestinal upsets associated with tetracycline therapy. Rather than being due to "outgrowth of Candida," these side effects more often result from chemical irritation of the stomach or the intestines by the antibiotic or its break-down products, or from superinfection by tetracycline-resistant staphylococci. The hazard of routine use of tetracycline fungicide combinations is that inhibition or eradication of the fungus might favor overgrowth of potentially more dangerous organisms. Medical Letter consultants believe that routine prophylactic use of antifungal agents along with tetracyclines cannot be justified. When an antifungal agent is needed, it is best to use either nystatin or amphotericin B in full therapeutic doses. (The Medical Letter on Drugs and Therapeutics, April 28, 1961)

Use of Aluminum Foil in Burns. In addition to use of aluminum foil as a dressing over granulating burn wounds, it has several advantages when placed beneath the patient. It prevents adherence to bedding and lessens blood and serum loss when the open method of treatment is used. Furthermore, transportation of the burned patient to the operating room while lying on this material is less painful. Use of aluminum foil to cover the operating table decreases loss of fluid from the wounds and allows more accurate measurement of blood loss with surgical debridement or grafting procedures. (J. Terry and J. Trabue, Amer J Surg, April 1961)

Treatment of Hypertensive Emergencies. When hypertension is severe enough to threaten acutely the integrity of the cardiovascular system, prompt parenteral administration of antihypertensive drugs may be lifesaving or may prevent serious and crippling cardiovascular accidents. The drug of choice is reserpine; ganglion-blocking agents are indicated when reserpine is not optimally effective or when it produces so much drowsiness that it confuses the clinical picture. When parenteral hypotensive therapy is indicated for several days at a time, side effects can be minimized by alternating therapy with reserpine and ganglion-blocking agents every day or so. (R. Gifford Jr, Medical Clinics of North America, March 1961)

DENTAL

SECTION

Immediate Dentures and Speech Defects

Oscar E. Beder, D.D.S. and Carol Troffer, B.A., M.A.,
Dept Prosthetics, University of Washington, Seattle, Wash.
Dental Progress, July 1961.

Speech defects are usual when a patient first starts wearing immediate dentures. But the better the patient's attitude toward the dentures, the quicker and more completely his speech returns to normal, suggesting that the prosthodontist can help his patients by fostering favorable attitudes toward the dentures.

Twelve patients with immediate dentures were studied to determine whether the dentures caused any speech defects, whether they were permanent defects, whether a patient's attitude toward the dentures was related to speech defects, and whether the dentures changed the usual tongue-palate contact while the patient was talking.

One predenture and four weekly post-denture speech samples were tape recorded and analyzed for each patient; tongue-palate contacts were studied by means of a special palatographic technique; each patient answered a questionnaire on his attitude toward the dentures. The test showed that:

Although the patients made a number of speech errors in the first 7 to 10 days after they started wearing dentures, the defects were not permanent; by the end of the study period speech was normal or nearly normal. However, patients with the most errors in the first week returned to normal more slowly than the others. Most articulation errors were made in the s, z, sh, th, r, and l sounds. Patients with removable partial lower dentures had fewer articulation errors than those who had immediate full lower dentures.

The palatograms showed that in most cases the tongue-palate contact area was smaller after the patients wore dentures than before.

Patients who had the least speech changes also appeared to have the best attitudes toward the dentures. However, those whose attitudes were not as favorable and who had more speech defects

did not markedly improve their attitudes as their speech defects decreased.

(Full details of the tests and the statistical calculations are available on request to Dr. Oscar E. Beder.)

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Effects of Full-Mouth Extraction on Oral Microbiota

CDR M. A. Mazzarella DC USN and I. L. Shklair, PhD, U.S. Naval Research Facility, U.S. Naval Training Center, Great Lakes, Ill. *Dental Progress*, July 1961.

Changes in the incidence of oral acidogens following full-mouth extraction and the wearing of dentures leads to evidence that patients who wear partial dentures can help prevent caries by scrupulous oral hygiene.

The study of the effect of full-mouth extraction and denture placement on the incidence of lactobacilli, yeast, staphylococci, and streptococci revealed the following:

1. During the edentulous period lactobacilli and yeast were not detectable but streptococci greatly increased.
2. Within two weeks after dentures were put in the mouth, the lactobacilli and yeast reappeared, and by the third to fifth week they had returned to their pre-extraction levels.
3. The incidence of streptococci remained high until the lactobacilli and yeast returned to their pre-extraction levels; it then returned to its lower pre-extraction level.
4. Five weeks after denture placement, microbial incidence was stabilized at pre-extraction levels.
5. The staphylococci remained essentially unchanged throughout the entire study.

When the findings are interpreted and correlated with interpretations in earlier studies, it becomes evident that partial- and full-denture wearers should be advised of benefits of scrupulous oral hygiene habits, which can keep aciduric bacteria and yeasts at low levels and help prevent dental decay and denture sore mouth.

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I cannot give the formula for success . . . but I can give the formula for failure . . . Try to please everybody.

—Herbert Bayard Swope

Bacterial Invasion of Blood
Following Oral Surgical Procedures

Alexander Schirger MD, William J. Martin MD, R. Quentin Royer DDS, Gerald M. Needham PhD, Mayo Clinic, Rochester, Minn. *Proc Mayo Clin* 35:618-622, October 12, 1960.

The incidence of bacterial invasion of the blood of patients undergoing oral surgical procedures at the Mayo Clinic who had not received any antibiotic beforehand was compared with that of patients who were given phenoxyethyl penicillin by mouth prior to operation.

Group A consisted of 50 patients who received no antibiotic before operation. Group B consisted of 50 patients who received two tablets of phenoxyethyl penicillin (each tablet containing 500,000 units or 300 mg) at intervals of about 6 hours for a total of four doses preceding the operation which was undertaken about 4 hours after the last dose. Group C consisted of 27 patients who received one tablet of phenoxyethyl penicillin also every 6 hours for four doses preoperatively. Samples of blood for cultures were obtained from all patients immediately after surgery, and another sample was obtained 18 hours later.

Twenty-seven of the 50 untreated patients in Group A had positive cultures of the blood obtained immediately after oral surgery. Ten of these positive cultures grew streptococcus mitis and one yielded staphylococcus pyogenes var. aureus. Eighteen hours after operation the blood of all these 27 patients was negative for bacteria.

Eight of the 50 patients comprising Group B had positive cultures of blood drawn immediately after operation. Eighteen hours after operation, the blood of all eight was negative for bacteria. However, the blood drawn at 18 hours after operation from three other patients in this group grew organisms even though cultures of blood of these patients were negative at operation.

Five of the 27 patients in Group C had positive cultures from the blood obtained immediately after operation. One of these cultures yielded streptococcus mitis. None of these five had positive cultures of blood drawn 18 hours after operation. Four additional patients in this group of 27, however, had positive cultures of blood drawn 18 hours after operation even though the cultures made immediately after operation were negative.

The data appear to corroborate the findings of others, in that a significantly greater number of positive blood cultures occurred in the group of patients who did not receive penicillin prior

to oral surgery.

It is of interest that all patients with positive cultures of blood drawn immediately after operation had negative cultures of blood obtained 18 hours after the procedure. Although this finding seems to indicate that bacterial invasion of the blood after oral surgical procedures usually is a transient phenomenon, it does not follow that such a phenomenon should be treated lightly.

It appears that phenoxyethyl penicillin is at least as effective in the dosage schedule employed as is parenterally administered penicillin G employed by other investigators.

The observations in Group B suggest that when 4,000,000 units of phenoxyethyl penicillin is to be given by mouth, this treatment need not begin until 24 hours before operation rather than 48 hours beforehand. The observations further indicate that for prophylaxis, penicillin may be given in the phenoxyethyl form by the oral route.

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Personnel and Professional Notes

Philippine DA Meeting. Two Dental officers from the U. S. Naval Station, Sangley Point, Philippines, recently participated in the 53rd annual meeting of the Philippine Dental Association held in Baguio City and attended by approximately 900 dentists. CAPT F. K. Etter demonstrated Mr. Disaster and lectured on mass casualty care; LCDR R. H. Flagg presented a projected clinic, An Approach to Endodontics.

CAPT Lytle Presents Paper. CAPT R. B. Lytle DC USN, Commanding Officer, 2nd Dental Company, Force Troops, FMF, Lant, Camp Lejeune, N. C., recently delivered a paper entitled Soft Tissue Displacement Beneath Dentures at the annual meeting of the Academy of Denture Prosthetics. The meeting was held at the Radisson Hotel, Minneapolis, Minn.

CAPT Stanmeyer Attends Research Seminar. CAPT W. R. Stanmeyer DC USN, Head, Professional and Research Branches, Dental Division, Bureau of Medicine and Surgery, presented a lecture entitled Preventive Dentistry in the Navy during the Biological Science's section of the 13th Annual Naval Reserve Research Seminar. The seminar, sponsored by the Office of the Special Assistant to the Chief of Naval Research, was held on June 4-17, 1961, in Washington, D. C.

Postgraduate Class Graduation. Graduation exercises were held Friday, June 30, 1961, at the U. S. Naval Dental School, NNMC,

Bethesda, Md., for 32 Naval Dental officers who have completed graduate and resident training.

In a commencement address, Rear Admiral Bernard A. Clarey USN, Director of Military Personnel Policy, Office of the Secretary of Defense, told the graduates what their responsibilities are as professional representatives of the United States Navy. This group of officers will assume duties in all parts of the world and their responsibilities will be varied.

LCDR Loren V. Hickey DC USN was presented with an operative dentistry award by the Surgeon General of the Navy, Rear Admiral Edward C. Kenney MC USN.

CAPT A. R. Frechette DC USN is the Commanding Officer of the Dental School.

Naval Dental Officer Appears at Meeting. On June 19 and 20, CAPT E. N. Gardner DC USN, U. S. Naval Dental Clinic, Philadelphia, Pa., presented a table clinic Preparation and Design of Removable Partial Dentures at the Annual Meeting of the 9th District Dental Society at Erie, Pa. CAPT W. A. Smith DC USN, District Dental Officer, 4th Naval District and Commanding Officer, U. S. Naval Dental Clinic, Philadelphia, also attended the meeting.

Observership Training for Trust Territory Dentists. A series of dental observership training courses of 8 weeks duration has been established at the U. S. Naval Dental Clinic, Guam, Marianas for Trust Territory dentists. Dr. A. A. Jaffe, head of dental service of the Trust Territories, had requested these courses as refresher training for his dentists.

Micronesian dentists will receive training in Oral Diagnosis, Preventive Dentistry, Operative Dentistry, Exodontia, Oral Surgery, Endodontia and Prosthetic Dentistry. It is interesting to note that the first two dentists to commence this training were among the students who attended the Dental Practitioners' School established by the U. S. Navy on Guam at the end of World War II. The School was established to train persons from the Marshall Islands, Panope, Yap, Turk, Palau, and Rota. Later, the U. S. Department of Interior assumed responsibility for this training and transferred the training site to Panope. The British Government subsequently undertook this training on Suva, Fiji Islands. CAPT M. J. Brandt DC USN is Commanding Officer of the Naval Dental Clinic.

U. S. Navy and Royal Canadian Dental Corps Exchange. About August 15, 1961, an exchange of Dental officers between the U. S.

Navy and the Royal Canadian Dental Corps will be effected upon the reporting of CDR R. R. Troxell DC USN to the staff of the Royal Canadian Dental Corps School, Camp Borden, Ontario, Canada, and LTCOL J. W. Turner, Royal Canadian Dental Corps to the U. S. Naval Dental School, NNMC, Bethesda, Md.

The one-year exchange provides for a member of the staff of the U. S. Naval Dental School in Operative and Crown and Bridge Departments in return for a Canadian Dental officer in the same specialty fields to serve at the Naval Dental School.

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RESERVE



SECTION

THE BERRY PLAN

Armed Forces Physicians' Appointment and Residency Consideration Program

Q. Will I have a Reserve obligation upon completion of 2 years of active military service?

A. Individuals who accept a Reserve appointment (i. e., sign the oath of office) in the Army, Navy, or Air Force before attaining the age of 26, incur the Reserve obligation imposed by Section 651(a) of Title 10 of the United States Code. This consists of 2 years of active military service, 3 years in the Ready Reserve (this obligation is being fulfilled while participating in residency training), and 1 year in the Standby Reserve. It must be emphasized that the factor determining your obligation under this law is your age at the time you accept a Reserve commission (sign the oath of office), regardless of the date you actually enter on active duty. The military departments require that Reserve appointments be accepted or declined within 30 days of the date of tender and will not waive this requirement for the sole purpose of permitting an individual to outlive the provisions of this law.

Q. When will I be notified of my active duty assignment?

A. The military departments issue active-duty orders from 60 to

90 days prior to the month in which the individual is scheduled for duty.

Q. What chance do I have of being selected for residency training?

A. That will depend upon the number requesting deferment consideration in the program. Each specialty will be considered separately, and selection will be by random choice within that specialty. The following table shows the percentage of applicants selected in the various specialties in the program for 1960 graduates:

<u>Specialty</u>	<u>Percent</u>	<u>Specialty</u>	<u>Percent</u>
Allergy.....	100	Surgery, General	100
Anesthesiology.....	100	Surgery, Thoracic	100
Cardiology.....	100	Pediatrics	92
Gastroenterology.....	100	Obstetrics & Gynecology...	82
General Practice.....	100	Surgery, Plastic	75
Neurology	100	Internal Medicine	72
Occupational Medicine ...	100	Orthopedic Surgery.....	68
Otolaryngology.....	100	Radiology	66
Physical Medicine.....	100	Pathology	64
Preventive Medicine.....	100	Urology	59
Psychiatry.....	100	Dermatology.....	41
Pulmonary Disease.....	100	Ophthalmology.....	30
Research.....	100	Surgery, Neurological.....	26

Q. May I be assured of deferment for the years of residency training required to complete my specialty board certification requirements?

A. If you are selected for deferment, every effort will be made to have your deferment continued until you complete your board requirements. Continued deferment is contingent upon your desires, your acceptability to the hospital, and the needs of the Armed Forces.

Q. Is it possible to be deferred for 4 or 5 years of residency training?

A. Yes. Individuals selected for residency training in established 4- or 5-year programs may be recommended for deferment for a fourth or fifth year if selected for continued training by the hospital concerned.

Q. I was selected for residency training in ophthalmology. May I be deferred to take a basic science course in ophthalmology?

A. Yes. The Hospital Agreement may be signed by an official of the school.

Q. I was selected for residency training in a specialty for which one year of general surgery is required. May I take my first year of training in general surgery?

A. Yes. Deferment for training in general surgery will be approved in those specialties requiring one year of general surgery.

Q. I was selected for recommendation for deferment in psychiatry. I have now decided I want a residency in ophthalmology. May I change my specialty?

A. No. Changes in specialty will not be permitted after selections are made. Selections are made by specialty on the basis of requirements. These requirements are carefully calculated and must be filled.

Q. May my call to active duty be delayed for the second year of a 2-year rotating internship?

A. Yes; by checking paragraph 3b. of the Statement of Preference (SD Form 249).

Q. My residency will not start until 1 January 1963. If I accept this residency can I be recommended for deferment?

A. Yes.

Q. I have applied for a civilian residency which obligates me for additional service upon completion of my residency training. May I be deferred?

A. No. To be eligible to participate in this program you must be available for military service upon completion of your residency training or termination of your deferred status.

Q. Is there an age limit for participation in the residency deferment program?

A. Yes, you must complete residency training before attaining age 32.

Dates to Remember

15 September 1961.....Deadline for return of Statement of Preference (SD Form 249).

1 December 1961Deadline for submitting application for commission to the sponsoring service.

1 March 1962..... Deadline for obtaining residency and submission of Request for Residency Training (SD Form 247).

PLEASE NOTE: Correspondence concerning your assignment, the status of your application for commission, and the time of call to active duty should be addressed to the military department to which you have been allocated.

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Follow Rules - You'll Speed AcDuTra Pay

When you report for active duty for training, follow these suggestions and you will speed payment of your AcDuTra pay and allowances:

Basic Allowance for Quarters (BAQ)—Save yourself time and trouble by having your substantiating documents for BAQ completed and certified before you report for active duty for training.

Officers must file Dependency Certificate—Wife, or Child Under 21 Years, DD Form 137, or NavCompt Form 2040, whichever is available. Dependency Certificate—Mother and/or Father, NavCompt Form 2040-1, is required when appropriate.

Enlisted Reservists must file Application for Dependents Allowance, NavPers Form 668.

Failure to have these forms completed and ready for submission when requested will hinder or delay payment.

Whenever possible, obtain these forms from your local Naval Reserve training center and complete them there.

Copies of Orders—Reservists sometimes lack the proper number of certified copies of orders, or have incomplete orders with missing endorsements.

All Reservists are required to have the original and eight certified copies of orders, complete with all endorsements including the signature of the Reservist acknowledging receipt of orders, in their possession when reporting for AcDuTra.

Do not detach any of the copies of the orders you receive unless you have more than the minimum number required. If you submit less than the required number, the disbursing office may return the orders to you for the purpose of preparing additional copies.

Make certain you have all possible endorsements completed before you submit your orders to the disbursing office. (The Naval Reservist, NavPers 15653, June 1961)

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Mirror, Mirror, on the Wall

Am I the sharpest of them all? Naval Reserve officers will do well to ask themselves this question—and to take a long look in that truthful mirror.

Bright braid, shined shoes, well-fitted suit—you know the various items to check yourself on. Have you been promoted and added a bright stripe to faded ones? Do you wear just any civilian shoe that is black rather than the required smooth toe? Have you lost weight and not had your suit refitted? Have you neglected to add shoulder straps to your raincoat? We could continue these queries—but again, you know what your appearance reveals.

For those one or two in every crowd, let's do something about that appearance. After all, you hold a commission in the U. S. Naval Reserve, and you should be proud of it. That pride should show itself in the way you wear the uniform.

BuMed takes pride in its Naval Reserve Program, so when you report for a tour of training duty—or to a training seminar—or whenever you wear the Navy uniform—look sharp. And while we are on the subject of uniforms, let's mention the new regulation for Specialist units. Changes to BuPers Manual and Navy Uniform Regulations are now in the mill to require administrative officers in drill pay status in the non-pay Specialist Programs to wear the uniform to drills. (The Reserve Weaponeer, May-June 1961)

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American Board Certifications - Inactive Reserve

The following Medical Reserve Officers (inactive), have attained Board certification:

American Board of Anesthesiology

LT Donald W. Stein
CDR Bernice R. Walters

American Board of Internal Medicine

LT Ralph R. Abbott
LCDR William L. Alsobrook, (Gastro-ent)
LTJG Irwin M. Arias
LT Richard J. Conroy
LT William H. Danforth
LT Meyer Kaplan
LT David H. Lewis

American Board of Internal Medicine (continued)

LT Edwin D. Longaker, (Gastro-ent)

LT Patrick J. Maloney

CDR David M. Marcley

LT Stuart Riggs

LT Thomas F. Sellers, Jr.

LT Morton E. Shafran

LT Robert E. Slayton

LT Joseph V. Sharrotta

LCDR Walter J. Stuckey, Jr.

LT Mack V. Traynor, Jr.

LCDR Stanley Wallach

LCDR John W. Worthington, Jr.

American Board of Obstetrics and Gynecology

LCDR Matthias H. Backer

LT John D. Farris

American Board of Ophthalmology

CDR William Blender, Jr.

LT Tom L. Johnson, Jr.

American Board of Orthopedic Surgery

LCDR Edward L. Mahon, Jr.

LT Donald P. Smiley

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American Board of Pathology

LCDR John E. Johnson, (Anatomic Pathology)

LT Norman Lowe

LT Albert L. Mooney, (Anatomic Pathology)

LCDR Richard D. Otis, (Clinical Pathology)

LCDR Donald A. Senhauser, (Anatomic & Clinical Path)

LT Thomas D. Trainer, (Anatomic & Clinical Path)

American Board of Pediatrics

LT George W. Bean, (Ped Allergy)

LT David O. Childers

LT Donald N. Medearis, Jr.

American Board of Preventive Medicine in Public Health

LT Robert L. Magoffin

American Board of Psychiatry and Neurology

CDR Robert E. Switzer, (Child Psy)

American Board of Surgery

LCDR Joseph Bartowski
LCDR Edward C. Lewis
LT John G. Whitcomb

American Board of Urology

LT William P. Nicholson, III

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PREVENTIVE MEDICINE

The Drinking Driver: Survey of 100 Cases

S. Freeman, T. D., Brit Med J 5211:1513-1515, 19 November 1960.

This survey covers the period between 1958 and 1960, approximately 2 years. During that period the author was for 18 months 1 of 6 deputy police surgeons for the City of Manchester, England. There was one full-time police surgeon. The survey covers a fair cross-section of the total suspects examined in that city during the period. Since April, 1960, a new system has been devised, in which 5 divisional police medical officers have been appointed, each of whom is responsible for one division.

Procedure

When the duty divisional inspector considers that a driver may be under the influence of alcohol or drugs, a telephone call is made immediately to the police surgeon on call, and if he is available a police car is sent at once to pick him up. This saves valuable time, and it has been the rule rather than the exception for the author to arrive at the police station within 15 to 30 minutes from the time the driver was brought into the station. The driver is asked to accompany the police surgeon into an office where the lighting is good and there is adequate room for examination. Where

possible, the duty inspector is also present in the examination room and sits quietly throughout the examination. This is regarded as necessary to safeguard the examiner from possible assault, particularly when the opinion is given at the end of examination that the driver is unfit, because of alcohol, to drive a motor vehicle. The quiet and subdued driver occasionally changes at that point with almost dramatic suddenness into a violent creature, and one is only too glad of the protection of the law.

Before attempting to carry out an examination the consent of the driver must be obtained, and it was the practice, during the cases covered by this survey, to ask him to complete a certificate of consent as proof of his willingness to be examined. He is also informed at this stage, and again on completion of the examination or observation, that he may ask for his own or any other doctor of his choice to attend and examine him. Should he refuse examination, he is observed for a period varying from 20 to 30 minutes, and an opinion is then given. During that period he is asked from time to time whether he would like to change his mind and agree to examination. In approximately 50% of the cases seen, the driver made a request for the attendance of another doctor, but only in 6 cases did the doctor agree to attend. In most cases the doctor made it clear that he was prepared to accept the opinion of the police surgeon, having regard to the time lag before he could examine, and the fact that he had not had sufficient experience in this type of case.

Where certification of incapacity is refused by the police surgeon the police may still proceed with the charge, taking into account the incidents which have led to the arrest and the testimony of eye-witnesses. This has never occurred in the cases described in this survey where the author refused certification. In all such cases the opinion expressed was accepted without question, the driver was handed the keys of his car, and no further action was taken.

The Examination—with Clinical Features

Once the driver had intimated his consent to examination, he was asked to read aloud the certificate of consent which he was told he would be asked to sign. The reading and completion of this certificate by the driver acted as a valuable test of reading, writing, and memory. This was used in lieu of reading from a newspaper, and the certificate was produced as an exhibit in court where required. The examination then proceeded on the lines indicated in the BMA's publication, *Recognition of Intoxication*, under the

chapter headed A Suggested Scheme of Medical Examination.

The time of commencement of the examination was carefully noted, and the pulse was taken both then and on completing the examination. A careful check was made for any possible injury. The question of the part played by fatigue and shock, as well as excitement, was given the fullest consideration. Every effort was made to ascertain the previous medical history and whether any drugs were being taken. Leading questions regarding fits, diabetes, and history of ear disease were asked on all occasions. In all tests of coordination, each was carefully demonstrated to the patient before asking him to make the attempt. This served the twofold purpose of making it clear that the tests were normally quite easy to carry out and of satisfying a court of law that this was the case. Consistent features noted were the rapid, full, and bounding pulse, subnormal temperature, slightly raised blood pressure (both systolic and diastolic), suffused conjunctivae, dry and furred tongue, and widely dilated pupils with sluggish response to light. Although each and every one of the above could be explained by other conditions, their presence did help to complete a pattern which was present with remarkable consistency.

The presence of fine lateral nystagmus deserves special mention, since our findings bear out completely the importance of this feature as stressed in the publication Recognition of Intoxication. This is shown in the statistical findings in this survey. It is, of course, of manifest importance to exclude other causes of this sign. Having done so, the presence of fine lateral nystagmus in the cases seen was so consistent with the remainder of the examination that it would seem to be a major factor in a final verification of the decision made. In this connection, it was put to the author by counsel early in the survey that this sign was often present in normal healthy individuals. It was impossible to dispute this suggestion from personal experience at that stage. The question was put to the author again in the Crown Court during the hearing of one of the last cases described in this article. In the interim, the author had examined approximately 700 recruits for the Territorial Army and had carefully checked each one for the presence of this sign, with a nil return. In the reply to counsel, the author asked for and obtained permission to give the results of this check. The cross-examination then came to a sudden halt.

The greatest importance was attached in all cases to the possibility of neurological disease. Examination of the ears and hearing was given special attention and the results were noted. This aspect is a great favorite of defending counsel in attempting to discredit coordination tests.

The average time taken to carry out the examination was 20 minutes. On completion, the driver was told of the opinion formed and his comments were carefully noted, when printable.

It is interesting to note that all cases where consent to examination was refused, were certified after observation for the usual period. Gait, behavior, appearance, speech, and coordination were carefully watched and noted. In most cases permission to smoke was asked and given; cigarettes were dropped, and then there was difficulty in finding the cigarette tip with match or lighter, and even, in extreme cases, in getting the cigarette to the mouth. All such points added up, and it was apparent that refusals were largely made by those who had sufficient acumen remaining to realize that examination would result in certification. As will be shown, in all such cases the men were not only certified, but were duly convicted.

Statistical Survey of Findings

Certification. The trend followed a distinct and consistent pattern throughout. Approximately 2 out of every 3 were duly certified as being under the influence of alcohol to such an extent as to render them incapable of controlling a motor vehicle. The final figure was 69%.

Convictions and Acquittals. Of the number certified (69), exactly two-thirds (46) pleaded guilty and were duly convicted in the magistrates' court. Of the remaining 23, 17 were convicted after trial—12 in the magistrates' court, 5 in the Crown Court. The other 6 were acquitted—five in the magistrates' court and 1 in the Crown Court. Of the acquittals, 2 cases hinged on whether the accused was in fact in charge of a car at the relevant time; 2 were thrown out as a result of somewhat conflicting evidence of police and eye-witnesses; in the remaining 2 cases it was decided that there was some reasonable doubt in the minds of the court.

Certification Refused. It is a point worthy of serious notice that of the 31 in this category 30 were adjudged borderline cases, and the drivers concerned had to be given the benefit of the doubt. In the remaining case the driver was quite sober on examination. He had apparently caused his car to swerve badly while lighting a cigar and had become very argumentative and truculent when pulled up. The arresting constable, with commendable zeal, decided that a medical opinion was desirable.

Examination Refused. Nine drivers refused to be examined. All were duly certified after observation. Seven pleaded guilty, and were convicted in court. The remaining 2 were convicted after

trial. This tends to confirm the impression gained that refusal is consistent with a feeling of guilt and a fear of the results of examination.

Fine Lateral Nystagmus. This is worthy of special statistical note. Of the 69 certified cases, 67 showed this sign. It was also present in 2 of the noncertified; these 2 also had major physical disabilities which finally swung the pendulum in favor of noncertification.

Time of Examination. This followed the anticipated pattern, consistent with opening and closing times of public houses and the multitude of drinking clubs which are a feature of large cities. An irregular jump between 6 p.m. and 9 p.m. occurred in the few days preceding Christmas and, from the history obtained, followed office drinking parties. At such parties, inexperienced drinkers are plied with liquor by well-meaning but stupid colleagues and employers. It is a custom which cannot be condemned strongly enough. All 9 drivers thus involved were in their early twenties and presented a pathetic spectacle when they were sober enough to realize the consequence of their folly. None had ever before been in a police station.

Age factor. Between the ages of 20 and 50, cases occur fairly consistently. It is possible that after the age of 50, drivers have either reached the age of maturity or have not the desire to participate in drinking in public places. This might make an interesting study for the psychologist or even the psychiatrist. In the light of the condemnation of the modern teenager, it is worthy of note that not one driver in the survey was under the age of 20. This would appear to be the solitary silver lining in a very grey sky.

* * * * *

U. S. Navy Disease Vector Control Centers

U. S. Navy Disease Vector Control Centers are located on the East and West Coasts of the United States at the U. S. Naval Air Stations in Jacksonville, Florida, and Alameda, California, respectively. They are directed by officers in charge, are under the military command of the Commandants of the Sixth and Twelfth Naval Districts, and the management control of the Bureau of Medicine and Surgery.

The continuing increase in the complexity of vector and economic pest control problems, complicated by the appearance and increase of insect resistance to insecticides, the development and use of more toxic materials, and the increasing demand for more effective protection from insect attack, led to the establishment of

the Center at Jacksonville, Florida. This Center serves the Eastern and Caribbean Sea Frontiers, Naval Districts One through Nine, and the River Commands.

It soon became evident that economic considerations made it impracticable for West Coast activities to make use of the East Coast Center. For this reason the Center was established at Alameda, California, to serve the Western Sea Frontier, Naval Districts Eleven through Thirteen, and Seventeen.

The mission of the Centers is to provide technical and specialized services in the fields of vector prevention and control; to conduct related investigative and evaluation studies; to function as laboratories for the identification of entomological vectors of biological warfare agents; and to provide training and indoctrination of personnel in the methods and techniques of disease vector prevention and control.

The term "vector" is used to include all insects, rodents, and related organisms which play a significant role in the transmission of disease to man, act as intermediate hosts or reservoirs of disease, present problems of sanitary or hygienic significance, or otherwise affect the health and efficiency of personnel. In contrast, organisms destructive to structures, stored products, grounds, and other material are classified as "economic pests."

Within the primary mission, the Centers perform the following functions:

- a. Provide technical assistance with problems relating to vector prevention and control.
- b. Accomplish surveys of ships, stations, and other pertinent operational areas for the purpose of recognizing, defining, and preventing or abating vector problems of naval importance.
- c. Conduct special studies where required to facilitate vector prevention and control.
- d. Provide specialized areawide operational services for the control of vectors where accomplishment is normally beyond the scope of individual commands.
- e. Prepare and provide locally adapted written guides on the survey, identification, biology, and control of vectors and pests.
- f. Provide basic, advanced, and refresher training in vector and economic pest prevention and control for military and civilian personnel. Training concerning economic pest control will be coordinated with the Bureau of Yards and Docks or its designated representative.
- g. Provide aid, consistent with their mission and when authorized by appropriate higher authority, in the event of emergencies or disasters.

h. Identify suspected entomological vector agents of biological warfare.

i. Provide review of requisitions for nonstandard and controlled issue economic pest and vector control items as established by current directives.

j. Provide specialized vector survey and control items, including appropriate maintenance service thereof, where such are not normally available.

k. Conduct field and laboratory research, development, and testing studies in vector prevention and control as practicable and when authorized by the Bureau of Medicine and Surgery.

l. Maintain such liaison with governmental and civil agencies as necessary for the accomplishment of their mission.

Training is conducted each month at the two centers. Year-round, service students on active duty or in the Reserve complete two major vector and pest prevention and control courses. Disease Vector Control, a 2-week course, is designed primarily for Reserve officers of the Civil Engineer Corps, Seabees, and Medical Department personnel who request active duty training for 14 days. Disease Vector and Economic Pest Prevention and Control, a more extensive 4-week course, is open to all active duty officers and enlisted personnel of the Armed Forces who are engaged in supervisory or actual pest control activities.

Reservists are indoctrinated in the latest concepts of insect vector control with practical applications in the utilization of the newest insecticides and equipment. This course is normally given once every other month except in June and August, when the curriculum is held twice monthly.

The 4-week curriculum is a more detailed course providing a basic background in vector and pest control. It is designed to assist trainees for eventual certification as pest control operators in accordance with Department of Defense Directives. Representatives of the Army, Navy, and Air Force, civilian and military, attend this course.

The centers also conduct research, testing, and development projects approved by the Bureau of Medicine and Surgery. These include evaluation of Armed Services-developed materials such as survey apparatus, insecticide dispersal equipment, both ground operated and aerial, and fumigation operations. In addition, they are responsible for supervision of control operations at the air stations where they are located, and for providing technical assistance to naval activities on the East and West Coast.

TO THE OFFICERS OF THE MEDICAL SERVICE CORPS

On this 4th of August 1961, marking the 14th Anniversary of the establishment of our Medical Service Corps, it is with the warmest pride and pleasure that I express my sincere congratulations to all of you. This I do in the knowledge of your many contributions to our mission, and with complete reliance on your sustained loyalty and devotion.

As Surgeon General of the Navy, it is gratifying to extend the traditional "WELL DONE" for the successful accomplishment of the various demands placed upon your skills and abilities. In every endeavor to which you have devoted yourselves, you have rendered outstanding service over the years as individuals and as a group. It is, therefore, very satisfying to extend to you my appreciation and that of the entire Medical Department.

To each of you, wherever serving, HAPPY BIRTHDAY!

/s/

EDWARD C. KENNEY
Rear Admiral MC USN
Surgeon General

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